Ohio | Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

March 9, 2012

Ms. Karen Cibulskis
U.S. EPA, Region V
77 West Jackson Blvd (SR-6J)
Chicago, IL 60604-3507

RE: South Dayton Dump & Landfill Site, Moraine, Montgomery County, Ohio
Operable Unit 1Feasibility Study (OU1 FS)

Dear Karen:

We understand that U.S. EPA is currently developing a feasibility study (FS) for South Dayton Dump OU1 which includes remedial alternatives which will allow the existing businesses to remain at their present locations on top of the landfill. The alternatives consist of a hazardous waste or solid waste cap for the undeveloped area of the landfill, a hazardous waste cap or solid waste equivalent specialty asphalt (Matcon) cap around the existing businesses, and passive venting of landfill gas. In light of recent sub-slab vapor intrusion sampling results, we are concerned that capping and passive venting alone would not be a sufficiently protective remedy for the on-site businesses. Ohio EPA urges you to include in the feasibility study one or more alternatives capable of preventing migration of methane and soil vapors into the on-site businesses. These alternatives would feature targeted active vapor collection and treatment, such as soil vapor extraction (SVE).

A major concern for this site is for the existing businesses to be able to safely remain at their present locations on top of the landfill. Sampling of soil gas probes during the RI and the recent sub-slab soil gas sampling show methane and VOC concentrations in soil gas which potentially present unacceptable risks for on-Site workers at every occupied structure in the OU1 area. (See attached figures.) The installation of a low permeability cap has the potential to exacerbate the threat posed to the on-site businesses by methane and soil vapor. With the surface sealed by the cap, landfill gases and soil vapors trapped beneath the cap and building foundations may equilibrate to even greater concentrations, increasing the potential risk to the workers at the on-site businesses and their customers.

The vapor intrusion (VI) work plan stipulates that mitigation systems be installed at buildings where sample results exceed mitigation triggers. The likely mitigation system is a sub-slab depressurization system (SSDS). As noted in Region 5's Vapor Intrusion Guidebook, these systems are "a temporary fix to the problem" and "NOT the preferred long-term remedy." Building control remedies, such as SSDSs, are considered to be short-term or interim remedies, implemented until the long-term final remedy is complete.

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With respect to landfill gas and soil vapor, the passive venting of landfill gas is the current long-term remedial technology in the OU1 FS. The VOC contamination and explosive landfill gas beneath the Dryden Road Businesses Area presents a substantial on-going threat to those businesses which passive landfill gas venting and sub-slab depressurization systems alone cannot adequately address.

A SVE system designed and installed in concert with the specialty asphalt cap would depressurize the area beneath the Dryden Road Businesses, providing immediate primary protection from the vapor intrusion threat. SSDSs would serve as back-up systems, to be used in the event of an extraction system failure or when the SVE system was down for maintenance. In addition, SVE would remove and treat VOCs in the vadose zone beneath the Dryden Road Businesses providing an effective long-term solution to the vapor intrusion threat.

In summary, we believe an active vapor collection and treatment system beneath the Dryden Road Businesses is needed to protect those businesses, and we encourage U.S. EPA to include alternatives with SVE for the Dryden Road Business area in the OU1 feasibility study.

Please contact me at (937) 285-6452 to discuss any questions or concerns regarding this issue.

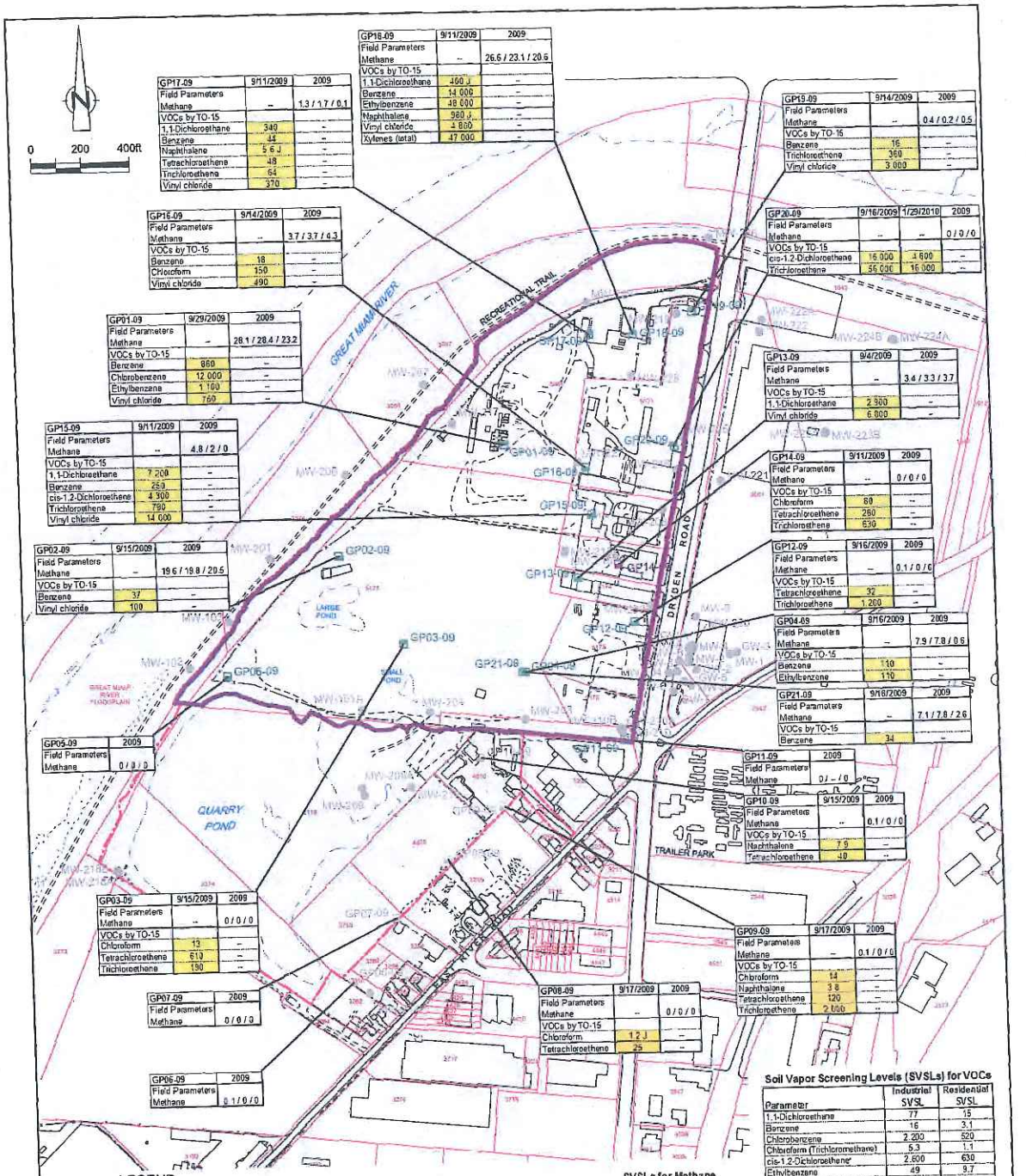
Sincerely,

Laura K Marshall

Laura Marshall
Site Coordinator
Division of Environmental Response and Revitalization

Attachments

ec: Cindy Hafner, Division Chief, DERR
Peter Whitehouse, Asst. Division Chief, DERR
Tiffani Kavalec, ACRE Section Manager, DERR
Mike Starkey, Manager, SWDO/DERR
Mark Allen, Supervisor, SWDO/DERR



Soil Vapor Screening Levels (SVSLs) for VOCs

Parameter	Industrial SVSL	Residential SVSL
1,1-Dichloroethane	77	15
Benzene	16	3.1
Chlorobenzene	2,200	520
Chloroform (Trichloromethane)	2,600	630
cis-1,2-Dichloroethene[a]	2,600	630
Ethylbenzene	49	9.7
Naphthalene	3.6	0.72
Tetrachloroethene	21	4.1
Trichloroethene[b]	61	12
Vinyl chloride	28	1.6
Xylenes (total)	4,400	1,000

NOTE:
1. The SVSLs are based on the USEPA 2011 Regional Screening Levels (June 2011) for Industrial and Residential Air.
2. The SVSLs were derived from the USEPA (Jun 2011) RSLs by applying the USEPA Region 5 Vapor Intrusion Guidebook (Oct 2010) default soil-vapor-to-indoor-air attenuation factor of 0.1.
3. a = An RSL is not available for cis-1,2-dichloroethene; the RSL for trans-1,2-dichloroethene was considered an evaluation surrogate for cis-1,2-dichloroethene.
4. b = The IRIS toxicity value for TCE was updated in September 2011. The SVSL in this table was not updated; it is based on the June 2011 RSL. However, the screening levels for the Work Plan (Tables 5 - 7) are based on the updated TCE toxicity value.

figure 3

2009 AND 2010 SOIL VAPOR SAMPLING RESULTS THAT EXCEED USEPA SCREENING LEVELS SOUTH DAYTON DUMP AND LANDFILL SITE

Moraine, Ohio

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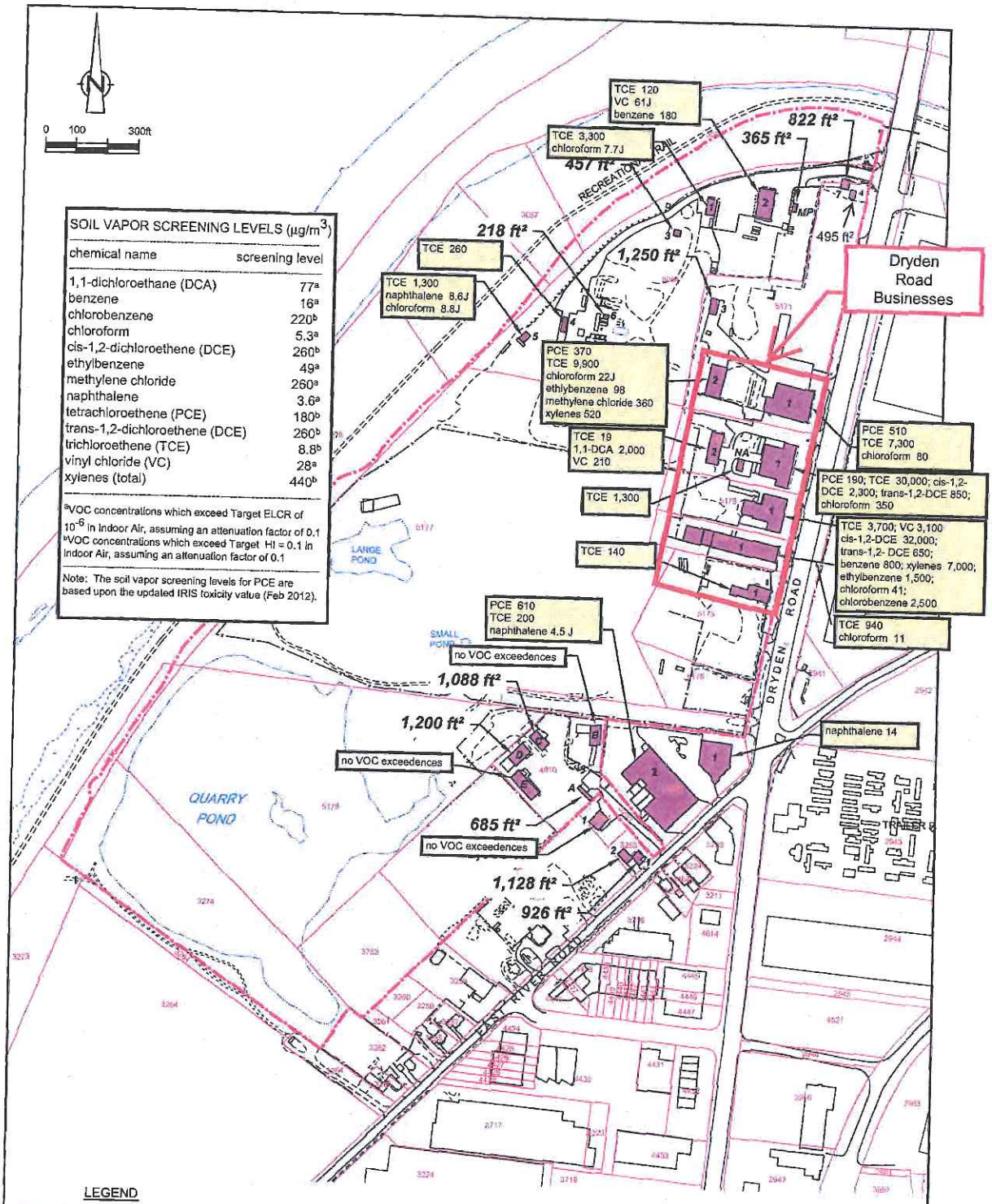

Sub-slab soil gas sample results - January 2012

Modifications to figure 4

SUB SLAB BUILDING DESIGNATIONS
SOUTH DAYTON DUMP AND LANDFILL SITE
Moraine, Ohio

SOURCES:
THE PAYNE FIRM, INC., PROJECT 0279.44.03, FIGURE 1, DATED 8/12/05;
TETRA TECH EM INC., PROJECT L6012008-SOUTH DAYTON DUMP, FIGURE 2, SITE LAYOUT, 05/25/2004;
CITY OF MORAINE.
ABRAMS AERIAL SURVEY INC. PROJECT 38443, AAS1 25810, 04/02/2008

38443-61(015)GN-WA001 AUG 02/2011

Revised by Ohio EPA -- March 2012

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